

# Alaskan Transportation

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## Local Technical Assistance Program Alaska Transportation Week draws statewide attendance

An Executive Proclamation signed by Governor Tony Knowles on April 5, 1996, named April 15-19, 1996 Alaska Transportation Week. He urged transportation-related groups and individuals to observe this week of education and in recognition of quality initiatives and partnering activities.

The first portion of the conference, held at the Sheraton Anchorage Hotel, focused on the National Quality Initiative, and ways to implement a quality policy in Alaska. City, bor-



*DOT&PF Commissioner Joseph Perkins speaks at Monday morning's NQI session.*

ough and state transportation officials gathered with contractors and  
*See "Conference" on page 3*

## Interactive technology may offer increased training options in Alaska

For most professionals, continuing education amounts to no more trouble than signing up for a day long class at their local university to which they drive or take the bus. Things are not so easy for Alaskan transportation professionals.

Because the transportation business often requires its people to travel to or be located in remote areas, say for a road project, access to valuable classes may be limited to those who work in an office. This coupled with the size of Alaska and the remoteness of some of its cities, towns and villages, makes attending classes nearly impossible or

at least very costly for even those who do have an office based in a populated area. Many times the training that a group of people need is simply not offered in their town or anywhere nearby.

In the past, the only options for anyone wanting to take a seminar or class, beyond paying the high price to fly to Anchorage, Fairbanks or Juneau, were video courses or written correspondence. Neither offered much interaction with the instructor or students, and making these classes interesting was, shall we say, a challenge.

*See "Technology" on page 4*

*"Improving Alaska's quality of transportation through technology application, training, and information exchange."*

# What happened to the headlight law?

In 1992, and again in 1993, the Alaska Department of Public Safety was facing an escalating traffic accident injury and fatality rate. Innovative ideas to address this problem were needed.

Reports from some European countries and Canada indicated that traffic collisions were dramatically reduced with the use of daytime headlights. This sounded like an easy solution with a proven track record for reducing accidents and serious injuries.

On April 2, 1994, a Public Safety revision to the Alaska Administrative Code became effective which required the use of headlights by vehicles at all times while traveling on a roadway with a posted speed limit

of 45 miles per hour and with signs posted indicating that headlight use is required. Because statistics on the Seward Highway showed a high rate of serious accidents, this route segment was selected as a test study for the new headlight requirement.

During the next two months, 32 regulatory signs with the message "DRIVE WITH HEADLIGHTS ON AT ALL TIMES" were installed between mileposts 3 and 114 on the Seward Highway. Accident statistics on this route showed reductions by as much as 30 to 40 percent when compared to figures prior to installation of the headlight signs.

Because of these impressive results of this test, a decision was made to require daytime use of headlights

on all major highways with speed limits of 45 miles per hour or more. If an annual ten percent reduction in accidents could be realized statewide, it was thought that yearly costs totaling as much as fifteen million dollars might be saved in medical care, long term disability, rehabilitation, worker's compensation, and property damage.

In 1995, an additional 500 signs were purchased and installation was started. Officials hoped that this simple measure to provide a higher degree of safety on Alaskan roadways would be appreciated by everyone.

However, immediately after the 1995 installation of the new signs commenced, public outcry was heard from all areas of the state. Some complained that they would forget to turn their lights off and thus run the battery down. Others complained of the "big brother" syndrome, and about the attempt to regulate Alaskans. Still others were incensed about the \$30 fine and the two points against their license if caught driving without their lights on, or about officers having the ability to enforce improper vehicular lighting equipment 24 hours a day.

Eventually, public outcry won out over public safety and the few signs that had been installed were removed. The Seward Highway signs were allowed to remain.

Agencies interested in seeing mandatory headlight use are presently working towards law and bail revisions that will make the idea more palatable to the driving public. Products that automatically turn off a vehicle's headlights when the vehicle is not running are also on the market, and some new cars are being manufactured with automatic headlights installed.

Our eastern neighbor, Canada, has had a national headlight law for years and is still campaigning on its merits for the recognized reductions in highway accidents and injuries.

Hopefully, Alaska will soon be on the same bandwagon.

*-By Bruce Frietag*

## News & Views

Effective February 1, 1996, the Northern Region Materials Laboratory is accredited by AASHTO in asphalt cement, emulsified asphalt and hot-mix asphalt testing.



A National Superpave 2000 open house will be hosted by the Indiana DOT in Indianapolis on August 21-22, 1996. It will showcase Superpave implementation efforts by leading states, provide updates on Superpave software and Westrack validation work. There will be discussions on the use of reclaimed asphalt pavement, Superpave aggregates, industry perspective on Superpave implementation, and the use of Superpave mix design and analysis procedures on a HMA warranty project. Attendees will visit Superpave construction projects and a Superpave laboratory.

For more information contact Sandi Robles or Mary Huth of "Accent on Indianapolis" and refer to Superpave 2000, phone (317) 632-8687 or fax (317) 632-5848.



The Fifth International Symposium of Cold Region Development will be held in Anchorage, Alaska, May 4-10, 1997. Abstracts for presentations at this conference will be accepted up until July 31, 1996 and should be typewritten and not in excess of 200 words. For more information call (907) 561-3280 or fax (907) 561-6645, or mail abstracts to: The Northern Forum, 4101 University Drive, APU Carr-Gottstein Center, Suite 221, Anchorage, Alaska 99508.



The ASCE 8th International Conference on Cold Regions Engineering will be held August 13-16, 1996 at the University of Alaska Fairbanks. Events at the conference will include the presentation of about 80 papers and a symposium dealing with the Trans-Alaska Pipeline. For information call ASCE at 1-800-548-ASCE or (212) 705-7285.

# Conference

*Continued from page 1*  
educators for two days of intensive workshops on subjects ranging from value engineering to research to hiring practices, and nearly everything in between. The theme surrounding all workshops was a focus on how to work together to make transportation in Alaska more efficient.

Wednesday featured the Alaska Transportation Forum, sponsored by the University of Alaska Fairbanks Transportation Research Center. The focus of the seminars shifted from quality initiatives to asphalt design, construction and maintenance. Speakers from as far

away as South Africa relayed their experiences with different types of pavement, all in an effort to improve the quality of roads.

Sessions on pavement issues continued the following day as the Alaska T<sup>2</sup> Pavement Issues Institute commenced. Sessions focused on problems relevant to Alaska such as winter maintenance and snow removal and how to deal with permafrost on a road project. The day closed with a panel discussion on maintenance techniques in the north.

The week wasn't all work. Along with the daily sessions, participants had the opportunity to talk

with several vendors that had booths at the conference. Breaks, lunches, and receptions at the end of the sessions provided participants with time for relaxation and conversation with others in their field.

The week concluded with a chance to go outdoors, get some fresh air, and get dirty. Friday featured John Hibbs teaching a seminar on pothole patching. After a morning of classes, participants had the opportunity to see some of the pothole patching techniques put to practice in the yard of the Central Region DOT&PF Maintenance and Operations section.

*-by Marmian Denton*



*Left: Monty Montgomery checks out the CD-I display at the Alaska T<sup>2</sup> center booth at Alaska Transportation Week.*

*Above: Wally Hiding and Dave Sterley look over the conference schedule.*



*Top Left: David Evans, Lutfi Raad and Matt Reckard conduct a panel discussion on the uses of fly ash in Alaskan projects.*

*Top right: Jerry Murphy and John Dickenson enjoy some of the fare at an evening reception during Alaska Transportation Week.*

*Above: Hannele Zubek and Eric Johnson exchange ideas during a session break on Thursday afternoon.*

# Technology

*Continued from page 1*

With new technology becoming available, those dull correspondence classes may be a thing of the past.

Remote training options currently in use include satellite link-ups and teleconferences. These methods allow class participants to take the class as it is happening, rather than watching a taped workshop. Teleconferencing allows students to ask the instructors questions.

The North Slope Borough School District has pioneered an even more advanced method of distance education through video-conferencing.

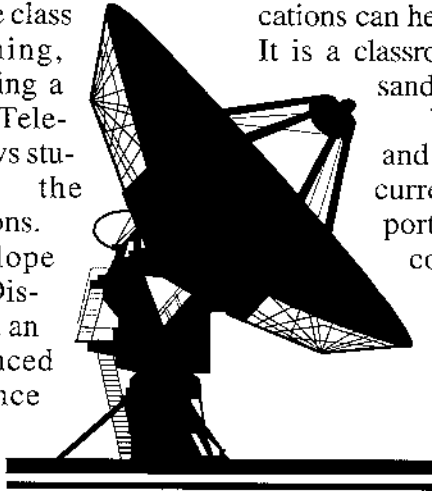
This new method of teaching, accomplished through the use of television, cameras, computers and satellites, literally brings the class to the student rather than the student going to the class. A single instructor in one central location can broadcast a class out to unlimited destinations.

Video-conferencing is more than just a glorified television program. The thing that makes the video-conferencing different from a taped class is the interaction between student and teacher. Not only do the students hear and see the instructor, but the instructor can hear and see the students, and students in different locations can hear and see each other. It is a classroom that can span thousands of miles.

While satellite classes and teleconferencing are currently in use for transportation training, video-conferencing has yet to be offered as an option for providing training in remote areas. Most of the remote locations simply don't have the necessary

equipment to send or receive these type of classes. But, as technology improves and the equipment becomes more available, the possibility exists to wipe out the necessity for correspondence study and replace it with a statewide classroom.

*-By Marmian Denton*



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## Participants unite against common enemy

They came from far and wide to marvel at the wondrous invention, to see it in action, and to step on its handiwork.

Such was the scene at the Alaska Department of Transportation and Public Facilities (DOT&PF) Maintenance and Operations yard on the last day of Alaska Transportation Week in Anchorage. Transportation professionals from around Alaska and the Yukon Territory gathered on Friday, April 19 to discuss and learn more about a specter common to northern roads. They all had the common goal to learn how to deal with this bane of high-

ways, the destroyer of pavement and annoyance of drivers: the pothole.

The first half of the day offered an in depth presentation by John Hibbs of the Kentucky Technology Transfer Center on the most current methods of pothole patching, including throw and roll techniques, semi-permanent patching, and spray injection, and the advantages and disadvantages of each method.

With the conclusion of the morning classroom section of the workshop everyone piled into cars and headed out to the DOT&PF yard on Tudor

*Right: Scott Bruss 'foot-tests' the patch produced by the robotic pothole patcher while other participants look on.*

*Far right: Randy Ferris fills a pothole with hot mix...*

*Bottom far right: ...then packs it down in a demonstration of the throw and roll pothole patching technique.*

*Bottom left: Participants of Friday's pothole patching class gather around a patch done by the pothole patching machine.*



Road. After some time to regroup and indulge in submarine sandwiches, attendees moved outside to see in action some of the pothole patching methods that were discussed earlier.



By far, the highlight of the afternoon was the demonstration of Central Region DOT&PF Maintenance and Operation's Roscoe "The Patcher" spray injection pothole patching machine. This strange looking machine, not unlike an elephant in

appearance, is an example of the newest technology in pothole patching. Not only does it allow pothole patching to be done by a single person, but it also allows this single person to fix even potholes filled with water and debris without ever setting foot outside the cab of the vehicle.

Also demonstrated was the old standby throw and roll technique, which involves such high-tech tools as a shovel and a truck tire.

Overall the class seemed a success, with participants leaving with a little more information on how to patch their damaged roads, and with at least a little emulsion on the bottoms of their shoes. After all, the best test of a pothole patch is how well it holds up when you walk all over it.

-By Marmian Denton



*Top left: Roger Butler speaks to instructor John Hibbs during a session break.*

*Middle far left: Gerald Reed explains the robotic pothole patching technique to session participants.*

*Middle left: Anderson Harvey tests the strength of one of the robotically generated pothole patches.*

*Bottom left: Gary Faber demonstrates the robotic pothole patcher.*

*Bottom right: Workshop participants replenish their energy before heading outdoors for the demonstrations.*



### ***For More Information***

For back issues of our newsletter and inserts, or to get on our mailing list, write: Alaska Transportation Technology Transfer Program, Department of Transportation and Public Facilities, 2301 Peger Road, M/S 2550, Fairbanks, Alaska 99709-5399. For more information, you can also call (907) 451-5320.



# Get comfortable with your computer

Computers are everywhere these days, but that doesn't mean that everyone is comfortable with them. Many people are still leery of computers, despite the publicity associated with them.

Are you like that? Do you regard your computer as a balky

temperamental machine that won't do what you want it to do? Do you have a secret fear that someday you are going to hit a key that will damage the computer and delete all of the files in it?

Have no fear. Most mistakes are easily correctable, and in fact, will help you learn. The best way to master a computer is to do what you did when you got a new toy as a child - just start playing with it. Here are some tips for mastering your computer.

## Start Pushing Buttons

Computers are made to be used; the best way to learn about them is to start punching keys and clicking the mouse and see what happens. Develop a spirit of curiosity, like a child. If you find yourself wondering about an unfamiliar program or software command, give it a try. Just make sure that you make backup copies of important programs and data, and keep the software manual on hand for reference when you are experimenting.

## Learn the Basic terms

Develop an understanding of computer terminology. You don't need to become an expert, but it will help if you develop a working knowledge of such terms as RAM (random access memory), hard an floppy disk drives, and expansion slots and ports. If the owner's manual is a mystery to you, go to your

local bookstore, where you'll find stacks of computer books that are written for beginners, which will explain everything you need to know in understandable language.

*Tip:* When you run into a computer problem, read the troubleshooting section of your computer manuals and books - you'd be surprised at how many computer problems are easily solved. If your printer doesn't work, the troubleshooting section will tell you to make sure its plugged in, that it has paper in it, and that the "on-line" light is lit - simple solutions, but ones that even experienced computer users sometimes overlook.

## Get Up to Speed with Your Software

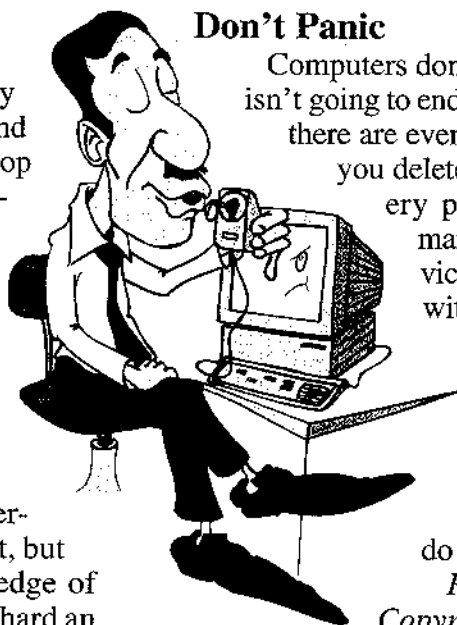
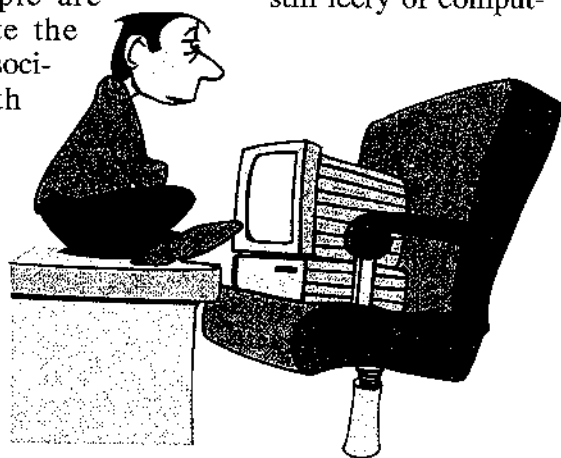
If you use a program a lot, do yourself a favor and take the time to figure out all that it can do. Operating systems, like Windows and DOS have different ways of naming, copying, moving and deleting files. If you master the commands you use most often, you'll pick up speed and get a feeling of confidence as you use the computer. Use any tutorial programs that come with your software - they give you hands-on experience with the basic commands and menus right away. The more you learn about your software, the easier it is to move efficiently among your files and programs.

## Don't Panic

Computers don't have to be scary. The world isn't going to end if you make a mistake. Today, there are even programs to recover files that you delete accidentally - and almost every problem is correctable. Most manufacturers have customer service numbers you can call for help with a problem, and if that doesn't work you can call in a computer technician.

Far from being scary, computers can be a lot of fun - especially when you start learning how they can help you do your job better.

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Recently the following undocumented Microsoft Windows error codes were made public via the Internet. While they may or may not provide assistance in the daily struggle with Windows, they should help morale when technical support fails.

<b>WinErr:001</b>	Windows loaded - system in danger	<b>WinErr:01B</b>	Illegal error - You are not allowed to get this error. Next time you will get a penalty for that.
<b>WinErr:002</b>	No error - Yet	<b>WinErr:01C</b>	Uncertainty error - Uncertainty may be inadequate
<b>WinErr:003</b>	Dynamic linking error - Your mistake is now in every file	<b>WinErr:01D</b>	System crash - We are unable to figure out our own codes.
<b>WinErr:004</b>	Erroneous error - Nothing is wrong	<b>WinErr:01E</b>	Timing error - Please wait. And wait. And wait. And wait.
<b>WinErr:005</b>	Multitasking attempted - System confused	<b>WinErr:01F</b>	Reserved for future mistakes of our developers.
<b>WinErr:006</b>	Malicious error - Desqview found on drive	<b>WinErr:020</b>	Error recording error codes - Remaining errors will be lost
<b>WinErr:007</b>	System price error - Inadequate money spent on hardware	<b>WinErr:042</b>	Virus error - A virus has been activated in a DOS-box. The virus however requires Windows. All tasks will automatically be closed and the virus will be activated again.
<b>WinErr:008</b>	Broken window - Watch out for glass fragments	<b>WinErr:079</b>	Mouse not found - A mouse driver has not been installed. Please click the left mouse button to continue.
<b>WinErr:009</b>	Horrible bug encountered - God knows what has happened	<b>WinErr:103</b>	Error buffer overflow - Too many errors encountered. Next errors will not be displayed or recorded.
<b>WinErr:00A</b>	Promotional literature overflow - Mailbox full	<b>WinErr:11B</b>	Acronym error - MOS not "Metal Oxide on Silicon."
<b>WinErr:00B</b>	Inadequate disk space - Free at least 76.4 MB	<b>WinErr:401k</b>	Reserved for future mistakes by our CEO - Bill now, paid later.
<b>WinErr:00C</b>	Memory hog error - More RAM needed. More! More! More!	<b>WinErr:678</b>	This will end your Windows session - Do you want to play another game?
<b>WinErr:00D</b>	Window closed - Do not look outside	<b>WinErr:683</b>	Time out error - Operator fell asleep while waiting for system to complete boot procedure.
<b>WinErr:00E</b>	Window Open - Do not look inside	<b>WinErr:911</b>	Insufficient memory - Only 50,312,583 Bytes available.
<b>WinErr:00F</b>	Unexplained error - Please tell us how this happened		
<b>WinErr:010</b>	Reserved for future mistakes by our developers		
<b>WinErr:011</b>	Window open - Do not look outside		
<b>WinErr:012</b>	Window closed - Do not look inside		
<b>WinErr:013</b>	Unexpected error - Huh?		
<b>WinErr:014</b>	Keyboard locked - Try anything you can think of		
<b>WinErr:018</b>	Unrecoverable error - System has been destroyed. Buy a new one. Old Windows license is no longer valid.		
<b>WinErr:019</b>	User error - Not our fault. Is not! Is not!		
<b>WinErr:01A</b>	Operating system overwritten - please reinstall your software. We're terribly sorry.		

*Reprinted with permission from "Tribal Roads" Fall 1995*

## For More Information

For back issues of our newsletter and inserts, or to get on our mailing list, write: Alaska Transportation Technology Transfer Program, Department of Transportation and Public Facilities, 2301 Peger Road, M/S 2550, Fairbanks, Alaska 99709-5399. For more information, you can also call (907) 451-5320.



DATE	EVENT	SPONSOR/CONTACT	LOCATION
August 4-7	National LTAP Meeting	Louisiana T2 @ (504) 767-9117	New Orleans, Louisiana
August 13-16	8th International Conference on Cold Regions Engineering	Dr. Larry Bennett @ (907) 474-6121	Fairbanks, Alaska
August 19-23	IRWA Course 101: Principles of Real Estate Acquisition	Course Coordinator @ (907) 459-1244	Last Frontier Club Ft. Wainwright, Alaska
August 21-22	Superpave 2000 Open House	Sandi Robles or Mary Huth @ (317) 632-8687	Indianapolis, Indiana
August 24-29	International Public Works Congress and Exposition	APWA @ (816) 472-6100	Washington, D.C.
September 9-19	Pavement Distress Identification & Techniques for Rehabilitation and Design	NHI, Ms. Hana Maier @ (703) 235-0500	University of Nevada, Reno
September 24-27	National Transportation Education Summit	1-888-366-6370, toll-free	Washington Hilton & Towers, Washington, D.C.
October 3-6	International Symposium on Asphalt Emulsion Technology	AEMA @ (410) 267-0023	Omni Shoreham Hotel Washington, D.C.
October 23-25	National Conference on Wood Transportation Structures	Diann Campbell @ (608) 231-9244	Madison, Wisconsin

## Meetings Around Alaska

Society	Chapter	Meetings Days	Location
ASCE	Anchorage Fairbanks Juneau	Monthly, 3rd Tues., noon Monthly, 3rd Wed., noon Monthly, 1st Wed., noon*	Northern Lights Inn Captain Bartlett Inn Breakwater Inn * except June-August
ASPE	Anchorage Fairbanks	Monthly, 2nd Thurs., noon Monthly, 1st Fri., noon	West Coast International Inn Captain Bartlett Inn
ASPLS	Anchorage Fairbanks Mat-Su Valley	Monthly, 3rd, Tues., noon Monthly, 4th Tues., noon Monthly, last Wed., noon	Executive Cafeteria, Federal Building Ethel's Sunset Inn Windbreak Cafe; George Strother, 745-9810
ITE	Anchorage	Monthly, 4th Thurs., noon	Sourdough Mining Company
IRWA	Sourdough Ch. 49 Arctic Trails Ch. 71 Totem Ch. 71	Monthly, 3rd Thurs., noon** Monthly, 2nd Thurs., noon# Monthly, 1st Wed., noon	West Coast Internat'l Inn **except July & Dec. Last Frontier Club #except December Mike's Place, Douglas
ICBO	Northern Chapter	Monthly, 1st Wed., noon	Zach's, Sophie Station
AWRA	Northern Region	Monthly, 3rd Wed., noon Brown Bag Lunch	Room 531 Duckering Bldg., University of Alaska Fairbanks, Larry Hinzman, 474-7331

## Reich works to better village water systems



Whether it be at home or at work, Richard Reich's focus seems to be on improvement.

Reich is currently the program manager of the Village Water and Sewer Project for the North Slope Borough Capital Improvements Program Management (CIPM) Department. The goal of the project is to provide residents of the North Slope Borough with potable water and

wastewater removal, a service that is available only in the village of Barrow.

A native of Barrow, Reich has come full circle to work for the people in the area where he was born. When Reich was two years old, the family moved to the lower 48, but returned six years later. He has lived in Alaska ever since.

Reich graduated from West Valley High School in 1978, and went on to attend the University of Alaska Fairbanks. Ten years later, Reich graduated with a bachelor's degree in Civil Engineering. It was during his years at UAF that Reich began his career.

Two years into college, Reich went to work for Ellerbe Alaska (known now as Design Alaska). During his nine years there, he went to school off and on and gained a great deal of experience in drafting, surveying, AutoCAD and engineering. Reich says that one of the great advantages to working in a small office was that he got to work on a variety of projects.

In 1989, Reich and his wife Melody moved to Anchorage where he went to work for Arctic Slope Consulting Group (ASCG). His work there focused mainly on the transportation aspect of engineering, with involvement in numerous Bureau of Indian Affairs road projects.

After four and a half years with ASCG, Reich signed on with the North Slope Borough as a Project Administrator for the Village Water and Sewer Project. One year later he was promoted to his current position.

Though his job involves projects in the rural villages, due to the fact that the consultants for the project are located in Anchorage, Reich works and makes his home there.

Living in Anchorage allows Reich to be in close proximity to the contractors and allows his wife, Melody, to pursue her degree in business management.

She has just completed her second year of study.

Reich and his wife have recently moved into their first home, so much of his free time has been spent on unpacking and home improvement projects. They currently have no children, but have a house full of pets. That situation may change, Reich says, now that they have a new house with a big back yard.

"I guess it's time for children or more pets, most likely both," he said.

When Reich is not busy working on his house, he engages in a number of different hobbies, many of which involve some sort of craftsmanship.

"Most of my career has been based around surveying, engineering design and the production of construction drawing, so I guess it is natural for me to have a desire to build or make improvements with my hands," he said.

Some of these activities include woodworking, computers and computer design, home improvement, and restoring old Chevrolets.

His greatest restoration project to date is his wife's 1968 Chevelle Malibu that she received when she was a junior in high school, around the same time they met. The restoration began in 1988 and by her ten-year high school reunion in 1989, the exterior of the car was completed, though Reich says the interior was still in shambles. More work after the reunion gave the car a complete new interior.

"For the 20-year reunion, the car will be in immaculate shape," Reich predicted. He is currently looking for a 1968 El Camino or a Corvette to begin his next restoration project on.

Reich also dabbles in photography and enjoys skateboarding and downhill skiing during the winter months.

Along with his hobbies, Reich is active in a number of professional organizations. He has held executive board positions in and is a current member of the Institute of Transportation Engineers (ITE). He is a founding member of the American Indian Science and Engineering Society (AISES), Alaska Professional Chapter, and was key in forming the student chapter of AISES at the University of Alaska Anchorage.

In the future, Reich plans to stay in Alaska. He has strong ties here to his family and his Native heritage. He hopes to eventually go back to school and earn his Master of Business Administration degree, and then start his own engineering firm.

*-By Marmian Denton*

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# Roots of English measurement a bit hazy

What, exactly, is an inch, a foot, a chain, mile, league, dram, scruple, peck, ounce, fluid ounce, gallon, barrel hogshead, carat, pound or ton? They are all measurements of distance, volume or weight. But is there any relationship of one to the other, or any way a person can start his own inch, foot, etc.?

Well, an inch, by classic definition is, "Three grains of barley, fat and round, laid end to end." The foot is the length of the human foot, although whose foot no one seems to know. The yard was originally the distance from the king's outstretched thumb to the end of his nose. Again, which king...?

The chain, or "Gunter's chain" is 66 feet long or 100 links of .66 foot, each. Except the engineer's chain, which is 100 feet, real feet, long. In case you are wondering, the Gunter's chain is a land surveyor's measure. Eighty chains equals one mile and ten square chains equals one acre, or 43,560 square feet.

Confused? This is what is known as the English system of measurements-the system we in the United States use. Just looking at it tells us that it was thrown together by different people at different times to suit their individual purposes. Only later were equivalents worked out. These were approximations and fortunate coincidences at best.

With the coming of mass production, the need arose for precise measurements to allow tolerance less than a human hair, and with exploration going on at a furious pace during the 17th and 18th centuries, a reliable unit of measurement of distances was needed. The original mile, 1,000 paces of a Roman Soldier, wouldn't work. If every expedition had to bring along Roman soldiers to do their measuring, they, being Romans, would want to conquer everything.

The metric system was invented by a French clergyman, one Gabriel Mouton, in about 1670. The French, being a most practical people, decided that a uniform system of measurement was needed, one which engineers anywhere could start on their own. They adopted metrics in 1795. The system was recognized by the U.S. Congress in 1875. It would appear that the gestation period is about 125 years.

Originally the meter was one ten-millionth of the distance from the earth's pole to the equator, measured along a meridian. Pretty ambitious, but it didn't quite work. So, the meter became the distance between two

marks on a metal bar in the International Bureau of Standards in Paris.

Even that didn't satisfy the need to be able to set up one's own measurement system, anywhere, given the proper equipment. So the definition of a meter now is the length of 1,650,763.73 wavelengths of the orange-red line of the spectrum of the element Krypton 86. Get that? Superman wouldn't want to mess with it for sure. That makes two of us. (Frankly, I'd rather go to Paris.)

This meter was then divided into hundredths (centimeters), thousandths (millimeters), all the way down through microns, millimicrons and Angstroms (which equal one hundred millionth of a centimeter). For longer distances, the meter was multiplied to get the kilometer, or 1,000 meters, so familiar to us all.

A degree Celsius is one-hundredth of the difference between the freezing point of water (zero degrees C) and the boiling point of water at sea level (100 degrees C.)

So, in order to measure a piece of lumber, a precise engine part, a farm field, the distance to London, the wavelength of an infrared ray, sugar and flour in a recipe, or the temperature of developing fluids, one only need refer to a single set of measurements.

Under the present system that we Americans use, we work with nearly impossible mathematics to do anything. For example, if an engineer wants to design a bridge, he must use decimal feet, because feet inches and fractions of inches are almost impossible to multiply and divide. The plans then must be converted to inches and fractions, because carpenter's rules are made that way. Surveyors on the job have to convert all of this back to decimals so they can multiply and divide to determine quantities and lay the thing out. This convoluted mess of conversions is expensive and opens up the door for mistakes.

The obvious solution is for the U.S. to make the conversion to metric. Scientists and engineers have been telling us this for years. We need to keep up with the rest of the world. The longer we wait to make the change, the more expensive it will be. Canada and Britain, among others, have made the switch. Isn't it about time we did?

Besides, our 125 years of waiting is almost up.

Reprinted with permission from "Express," Washington State Department of Transportation, March 1996

## commentary

Alaska Transportation Technology Transfer Program

Go Metric!

## McLeod-Everette commended for Transportation Week



Alaska DOT&PF Regional Director Tony Johansen presents Sharon McLeod-Everette with a certificate commending her for her work on Alaska Transportation Week.

Sharon McLeod-Everette received a certificate of appreciation for her work on Alaska Transportation Week in April. Calling the function an outstanding success, Joseph Perkins, Alaska DOT&PF Commissioner, offered his thanks on behalf of himself and other conference participants for the hours of work that McLeod-Everette put into the conference.

## HITEC releases new reports

The Highway Innovative Technology Evaluation Center (HITEC) has released two new reports of interest to those in the transportation field.

*Guidelines for the Testing of Seismic Isolation and Energy Dissipating Devices* focuses on these devices used to lessen seismic damage to bridge structures. This report offers standard testing and evaluation procedures for both seismic isolation and energy dissipating systems.

The second report evaluates a precast concrete segmental bridge system known as the JMI Channel Bridge. The bridge, developed by J. Muller International, has been used in France, and shows some promise for use in the United States in the replacement or rehabilitation of overpasses. This report, entitled *Evaluation Findings: The Segmental Concrete Channel Bridge System*, offers a plan to make the bridge available in the U.S.

Copies of either of these reports can be ordered through the American Society of Civil Engineers, Book Orders, P.O. Box 831, Somerset, NJ 08875-0831.

## NCHRP announces 1997 AASHTO-funded projects

The National Cooperative Highway Research Program has announced the American Association of State Highway and Transportation Officials funded projects for the 1997 fiscal year. These research projects are designed to provide solutions to operational problems facing highway and transportation engineers and administrators. The projects are:

Project #	Title
1-35	<i>Guidelines and Procedures to Aid State Highway Agencies in the Development of Pavement Performance Trends</i>
1-37	<i>Development of the 2002 AASHTO Guide for the Design of Pavement Structures</i>
2-21	<i>Economic Implications of Congestion</i>
2-22	<i>Needs in Communicating the Relationships Between Transportation Investment and Economic Growth</i>
4-25	<i>Automation of Materials Testing</i>
8-34	<i>Major Investment Studies: Process Development Including Coordination with NEPA Requirements</i>
9-11	<i>Verification Test Procedures for QC/QA Programs for Hot-Mix Asphalt Construction Using Contractor Quality Control Testing</i>
9-12	<i>Adaptation of SUPERPAVE Binder Tests to Recycled Asphalt Pavement Designs</i>
9-13	<i>Evaluation of Water Sensitivity Tests</i>
10-50	<i>Methods of Rehabilitating Rigid Pavements Concurrent with Heavy Traffic</i>
10-51	<i>Performance-Related Tests for Elastomeric Bridge Bearings</i>
10-52	<i>Performance Tests for Modular Bridge Deck Joints</i>
10-53	<i>Condition Evaluation of Prestressed Strands in Bridges</i>
10-54	<i>Quality-Based Performance Rating of Contractors and Suppliers for Prequalification and Bidding Purposes</i>
11-7	<i>A Feasibility Assessment of a National Reporting System for Highway Tort Claims Made Against Government Entities.</i>
12-46	<i>LRFD-Related Revision of the AASHTO Manual for Condition Evaluation of Bridges</i>
15-16	<i>An Evaluation of Superelevation and Transition Design and Operations Associated with Horizontal Curvature.</i>
17-15	<i>Safety on Over-Capacity Rural and Semi-Urban, Two-Lane Highways</i>
17-16	<i>Accident Warrant for Traffic Signals</i>
17-17	<i>Development of Guidelines to Improve Safety During Nighttime Construction or System Preservation Work</i>
18-5	<i>Optimization of Dry Kiln Cement Properties for Concrete Durability</i>
22-14	<i>Assessment of Updating Needs for the Procedures for the Performance Evaluation of Roadside Safety Features</i>
24-9	<i>Static and Dynamic Lateral Loading of Piles and Pile Groups</i>
25-13	<i>Assessments of Impacts of Highway and Bridge Deck Runoff Water Contaminants on Receiving Water</i>

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# Sessions examine Alaskan quality policy

For the first two days of Alaska Transportation Week, transportation professionals from around the state, both public and private sector, sat down together and discussed how to do their jobs a little better. The National Quality Initiative workshop featured speakers from around the country and breakout sessions where attendees could offer up their ideas for quality in Alaska.

Peter Wert, Vice President, Associated General Contractors (AGC) of America, presented a talk entitled "National Quality Initiatives - Goal or Journey?" He provided background into the origins of the National Quality Initiative (NQI) and noted that the development and preservation of a high-quality system requires a close partnership among all stakeholders.

Mike Miller of MB Construction opened a session on specifications with the contractor's view of what a specification should do. He emphasized that the specification should be clear, concise, and have a fair allocation of risk.

Francis G. Caputo of Trauner Consulting Services in Philadelphia discussed how to achieve clarity in specifications. He listed the four C's of writing specifications: 1. Clear - Reduce ambiguities by requiring measurable standards. 2. Concise - Use simple words, short sentences, and the active voice. 3. Correct - Ensure the specification is technically and grammatically correct. 4. Complete - Use the AASHTO 5-part format.

Ken Leuderalbert of Florida DOT, gave a presentation on value engineering. Leuderalbert defined value engineering as a process that involves getting the right group of people for a particular task and following

a structured plan to examine a project design in an effort to eliminate costs that are not essential to doing the job. He said teamwork is the fuel that allows common people to obtain uncommon results.

He identified six steps to a successful Value Engineering Program: (1) select/manage the right project (2) assemble the right team (3) study the project at the right time (4) follow/trust the value engineering process (5) make good implementable value engineering recommendations, and (6) follow through to resolution.

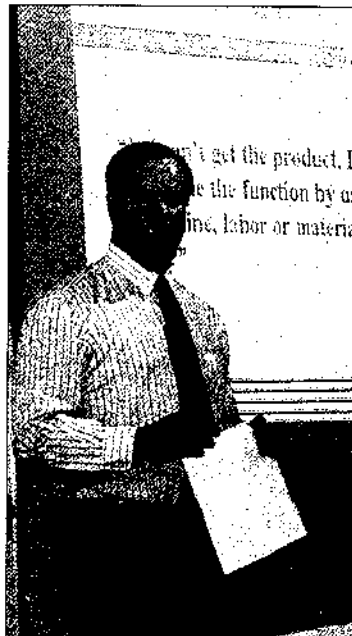
Alaska DOT&PF Commissioner Joseph Perkins addressed state financial concerns, cautioning that Alaska's highway funding could be reduced by future federal legislation. He said that current funding for maintenance of Alaskan highways is at the 1983 level and that there is not much room for further cuts. In order to fund Alaskan roads, he recommended that the state raise the gasoline tax from the current 8 cents to 25 cents per gallon, bringing Alaska to the average taxation level of the other states.

Boyd Brownfield, Alaska DOT&PF Deputy Commissioner, moderated a session on partnering in Alaska. Partnering started officially in 1992 and is changing attitudes in construction. The State of Alaska, DOT&PF

*Far right top: Tony Barter and Lutfi Ruad engage in a discussion during a break in between sessions.*

*Far right bottom: John Horn, Steve Ryan, Jerry Harmon, Craig Dudley, Brad West and Clif Olmstead receive the NQI award for Alaska for their work on the Glenn Highway, Eklutna to Parks Highway Project during a lunch presentation on Monday.*

*Right: Ken Leuderalbert gives a presentation on value engineering Tuesday morning.*



Alaska Transportation Technology Transfer Program

National Quality Initiative

Commissioner Perkins, Deputy Commissioner Brownfield, and the regional Design and Construction Directors pledged support to the partnering concept by signing a partnering pledge at Alaska Transportation Week. The goals of this agreement are quality construction, resolution of conflicts at the lowest level in a timely manner, safety, and treatment of all construction personnel with dignity and respect.

Brownfield also recommended developing an Alaskan Quality Initiative (AQI). The following AQI mission statement was proposed: "As we enter the 21st century, Alaskan transportation stakeholders must join forces to develop a vision for the future. We must pursue innovative solutions to transportation challenges and the increasing demands on available funding and resources. We must commit ourselves to strive for quality through customer focus, teamwork, common goals, innovation, and continuous improvement methods which add value and efficiency."

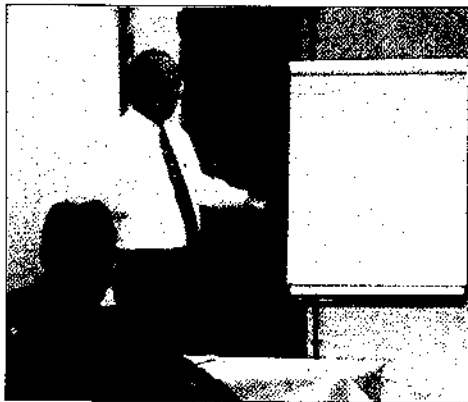
Michael R. Tooley, DOT&PF, discussed "construction post-mortems" in Alaska's central region. "Con-

struction post-mortems" are a process for critiquing all aspects of the

work done on a road construction project and recommending actions to improve future projects. Constructive criticism is sought from everyone involved in the project, from its inception through its completion. At the end of the construction season a meeting is called with special emphasis on: (1) what worked well and should be continued, (2) what was not included in the project that should be considered for future projects, and (3) what did not work and should never be tried again.

A highlight of the NQI portion of the conference was the presentation of the 1995 NQI Award for Alaska to those who worked on the Glenn Highway, Eklutna to Parks Highway Project, Phases 1A, 1B, 1C, & 1D. Contractors for the Phases were: Phase 1A: Eastwind/Vecto J.V.; Phase 1B: Construction Rigging, Inc.; Phase 1C: Wilder Construction, Inc.; and Phase 1D: Wilder Construction, Inc.. DOT&PF designed the project and value engineering was done by Peratrovich, Nottingham and Drage. The federally-funded project started in February 1991 and was completed in July 1994. It constructed 8.73 miles of a 4-lane divided highway along the Glenn Highway from Eklutna to the Parks Highway. The four separate phases of the project cost \$5.5 million and constructed a new 4-lane facility including 5 new bridges, one grade-separated interchange, and one railroad under crossing.

-By Gary Eddy



*Far left: Associated General Contractors Vice-President Peter Wert moderates a breakout session on developing an Alaskan Quality Initiative policy on Monday afternoon.*



*Left: Peter Wert presents NQI awards to Brad West and Craig Dudley.*



*Far left: Bob Ruby of the FHWA discusses Quality Initiatives in highway construction in Alaska on Monday morning.*

*Left: Susan Earp welcomes conference participants at the start of the NQI portion of Alaska Transportation Week.*

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*Please check the publications you would like to receive.*

- **Camino Y Calles De Bajo Tránsito**, ID-1482, American Society of Civil Engineers, UTEP, TEEX, ASU, USDOT/FHWA, Noviembre 1992, 189pp.
- **Design Specifications and Implementations Requirements for a Texas Long-Term Pavement Performance Program**, ID-1489, TX-94+1908-2, Research Report 1908-2, Center for Transportation Research, Texas Department of Transportation, August 1993, 176pp.
- **Development of Low-Profile to Safety-Shape Transition Sections**, ID-1501, TX-94/1992-1, Research Report 1992-1, Texas Transportation Institute, Texas Department of Transportation, November 1994, 50pp.
- **Evaluation of Rural Guide Signing: Second Year Activities and Preliminary Recommendations**, ID-1492, FHWA/TX-95/1373-2, Research Report 1373-2, Texas Transportation Institute, Texas Department of Transportation, May 1995, 196pp.
- **Facilities Planning and the Industrial Engineer**, ID-1483, Industrial Engineering Solutions, May 1995, 88pp.
- **Implementation of Technology From Abroad: A Synthesis of Highway Practice**, ID-1486, NCHRP Synthesis 216, Transportation Research Board, National Research Council, 1995, 44pp.
- **Implementation of the Texas Ground Penetrating Radar System**, ID-1497, FHWA/TX-92/1233-1, Research Report 1233-1, Texas Transportation Institute, Texas Department of Transportation, April 1994, 102pp.
- **Influence of Coarse Aggregate Shape and Surface Texture on Rutting of Hot Mix Asphalt Concrete**, ID-1496, FHWA/TX-94/1244-6, Research Report 1244-6, Texas Transportation Institute, Texas Department of Transportation, October 1994, 147pp.
- **Long-Term Evaluation of Stripping and Moisture Damage in Asphalt Pavements Treated with Lime and Antistripping Agents**, ID-1503, Summary Report 1286-1(S), Departmental Information Exchange, CTR, Texas Department of Transportation, Office of Research and Technology Transfer, June 1995, 1pp.
- **Long-Term Performance Evaluation of Polymer-Modified Asphalt Concrete Pavements**, ID-1505, Summary Report 1306-1(S), Departmental Information Exchange, CTR, Texas Department of Transportation, Office of Research and Technology Transfer, June 1995, 1pp.
- **Metric in Minutes: The Comprehensive Resource for Learning and Teaching the Metric System (SI)**, ID-1506, by Dennis R. Brownridge, Professional Publications, Inc., 1994, 102pp.
- **Offshore Scientific & Technical Publications 1990-1993**, ID-1498, OCS Report MMS 95-0008, U.S. Department of the Interior, Minerals Management Service, Technical Communication Services, 1995, 69pp.
- **Pavement Design, Evaluation, and Performance**, ID-1494, TRR 602, Transportation Research Board, National Academy of Sciences, 1976, 127pp.
- **Pavement Management and Performance**, ID-1493, TRR 1344: Pavement Design, Management, and Performance, Transportation Research Board, National Research Council, 1992, 154pp.
- **Pavement Roughness and Ride Correction Procedures for Jointed Concrete Pavements**, ID-1500, FHWA/LA-94-285, Louisiana Transportation Research Center, June 1994, 108pp.

*Alaska Transportation Technology Transfer Program*

*Notes on Publications & Videos*



\_\_\_ **Prime Coat Methods and Materials to Replace Cutback Asphalt**, ID-1495, FHWA/TX-94/1334-1F, Research Report 1334-1F, Texas Transportation Institute, Texas Department of Transportation, November 1994, 156pp.

\_\_\_ **Public Roads**, ID-1502, Spring 1995, Volume 58, Number 4, USDOT/FHWA, 56pp.

\_\_\_ **Railroad Research Issues**, ID-1487, TRR 1470: Rail, Transportation Research Board, National Research Council, 1994, 98pp.

\_\_\_ **Reliability of AASHTO Design Equation for Predicting Performance of Flexible and Rigid Pavements in Ohio: Final Report**, ID-1490, FHWA/OH/95/006, CTL Engineering, Inc., Ohio Department of Transportation, November 5, 1994, 167pp.

\_\_\_ **Summary of Progress, December 31, 1994**, ID-1488, National Cooperative Highway Research Program, Transportation Research Board, National Research Council, 1994, 236pp.

\_\_\_ **Traffic Management in Response to Major Freeway Incidents, Volume 1**, ID-1491, FHWA/TX-94/145-2F, Research Report 1345-2F, Texas Transportation Institute, Texas Department of Transportation, August 1994, 170pp.

\_\_\_ **Transportation Use in Minnesota: An Analysis of the 1990 Census of Population and Housing**, ID-1484, MN/RC-94/28, University of Minnesota, Minnesota Department of Transportation, September 1994, 10pp.

\_\_\_ **Truck Traffic in Laredo, Texas: A Case Study of Issues and Remedies**, ID-1504, Summary Report 1312-3(S), Departmental Information Exchange, CTR, Texas Department of Transportation, Office of Research and Technology Transfer, June 1995, 1pp.

\_\_\_ **US-75 North Central Expressway Reconstruction: May 1994 Traffic Conditions**, ID-1485, TX-94/1994-3, Research Report 1994-3, Texas Transportation Institute, Texas Department of Transportation, November 1994, 102pp.

\_\_\_ **The Use of Robotics In the Hydraulic Cement Mortars Testing Process**, ID-1499, TxDOT/TX-95/2928-1, Research Report 2928-1, Texas State Technical College-Sweetwater, Texas Department of Transportation, September 1994, 58pp.

These publications may be borrowed for three weeks. However, if you need the materials longer, just contact our office for an extension. Questions? Contact **Susan Earp** at (907) 451-5320 or TDD: (907) 451-2363.

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Name: \_\_\_\_\_ Title: \_\_\_\_\_ M/S: \_\_\_\_\_

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State/Province: \_\_\_\_\_ Zip: \_\_\_\_\_

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- \_\_\_ **Aesthetic Bridge Rails & Guardrails**, ID-331, 7:51 min.
- \_\_\_ **Concrete Bridge Protection, Repair and Rehabilitation**, ID-322, 5:15 min., Strategic Highway Research Program, Control C-103, 1994.
- \_\_\_ **D.O.T. Hazardous Materials**, ID-325, 17 min., Long Island Productions.
- \_\_\_ **Federal Highway Administration: Road Safety**, ID-329, 5:41 min., Federal Highway Administration.
- \_\_\_ **Hauling Hot Mix Asphalt**, ID-326, 8:25 min., National Asphalt Pavement Association.
- \_\_\_ **The Nuts and Bolts of Jolts**, ID-328, 22:15 min.
- \_\_\_ **Road Construction Ahead**, ID-323, 30 min., Focus Video Productions, Inc., 1991.
- \_\_\_ **Road Oyl: Resin Modified Emulsion**, ID-330, 25.5 min., Soil Stabilization Products Company, Inc. Brochure included: *Challenges, Problems & Solutions*.
- \_\_\_ **Rustbuster: Fundamentals of Corrosion Engineering**, ID-327, 1 hr., John Apostolos, Copyright MCMXCIV.
- \_\_\_ **Safely Controlling the Power of the Backhoe/Loader**, ID-324, VISTA Start Smart Video, 3 tape video set. Tape 1: "Walk Around the Backhoe/Loader,@ 12 min. Tape 2: "On-the-Job Operating Safety Awareness,@ 15 min. Tape 3: "Maintenance/Transportation,@ 10 min.
- \_\_\_ **Spill Drill**, ID-332, 25:00 min, New Pig Productions.
- \_\_\_ **SUPERPAVE: Asphalt Pavements the Perform**, ID-321, 5 min., Strategic Highway Research Program, February 27, 1992.
- \_\_\_ **Training Video Tape, Jobsite Safety Series: Developing Job Site Traffic Control Plans**, ID-334, 21 min, FHWA/USDOT. This video shows how to develop effective traffic control plans. It includes the steps from pre-planning through the actual design, writing, implementation, evaluation and revisions. (With information brochure).
- \_\_\_ **Training Video Tape, Jobsite Safety Series: Installation, Inspection, and Maintenance of Work Site Traffic Control Devices**, ID-335, 24 min, FHWA/USDOT. This video covers the installation and maintenance of traffic control devices at a basic worksite based on a traffic control plan. (With information brochure).
- \_\_\_ **Training Video Tape, Jobsite Safety Series: Work Zone Safety Concepts**, ID-336, 25 min, FHWA/USDOT. This video covers the basic principals of work zone safety, traffic control zones, planning for traffic control, the function of traffic control devices and typical applications. (With information brochure).
- \_\_\_ **Training Video Tape, Traffic Control Series: Markings and Islands**, ID-337, 19 min, FHWA/USDOT. This video covers the design and application of markings and islands. (With information brochure).
- \_\_\_ **Training Video Tape, Traffic Control Series: Special Use Traffic Controls**, ID-339, 17 min, FHWA/USDOT. This video covers special use traffic controls. These devices address potentially hazardous traffic conditions that are not covered elsewhere in the traffic control series. (With information brochure).

\_\_ **Training Video Tape, Traffic Control Series: Traffic Control Signals at Intersections**, ID-340, 18 min, FHWA/USDOT. This video covers how engineers determine if a signal is needed, how signal controller phasing works, and how signal timing works. (With information brochure).

\_\_ **Training Video Tape, Traffic Control Series: Traffic Controls for Schools, Railroad Crossings, and Bicycle Facilities**, ID-338, 24 min, FHWA/USDOT. This video covers traffic controls under three traffic control conditions requiring extra safety considerations: schools, railroad crossings and bicycle facilities. (With information brochure).

\_\_ **Training Video Tape, Traffic Control Series: Traffic Sign Inspection and Maintenance**, ID-341, 21 min, FHWA/USDOT. This video covers sign inspection and maintenance. (With information brochure).

\_\_ **Training Video Tape, Traffic Control Series: Traffic Sign Placement and Location**, ID-342, 22 min, FHWA/USDOT. This video covers the placement and location of signals in general and specifically at their placement and location in three areas: urban, rural, and freeways. (With information brochure).

\_\_ **Training Video Tape, Traffic Control Series: Worldwide Traffic Sign Systems**, ID-343, 26 min, FHWA/USDOT. This video covers types and purposes of the signs that are common to all three systems and reviews the basic elements for all sign systems. (With information brochure).

\_\_ **Video Transfer: Number One**, ID-344. Number 1 in a series of 9 videos. This video covers equipment operation and maintenance, loader operation and preventative maintenance, motor grader operation and motor grader preventative maintenance.

\_\_ **Video Transfer: Number Two**, ID-345. Number 2 in a series of 9 videos. This video covers weed spraying, dump truck operation and preventative maintenance.

\_\_ **Video Transfer: Number Three**, ID-346. Number 3 in a series of 9 videos. This video covers crane operation, forklift operation and preventative maintenance, winch operation, auger operation, bucket operation, and rotary mower operation.

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Organization: \_\_\_\_\_

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**Horizontal Alignment Design Consistency for Rural Two-Lane Highways, FHWA-RD-94-034, R.A. Krammes, R.Q. Brackett, M.A. Shafer, J.L. Ottesen, I.B. Anderson, K.L. Fink, K.M. Collins, O.J. Pendleton, C.J. Messer.**

This study evaluates the state of practice in geometric design consistency. Models and a menu-driven microcomputer procedure for their use were developed for operating-speed and driver-workload consistency evaluations of rural two-lane highway horizontal alignments. This report documents the study of design consistency on rural two-lane highways.



**Forensic Evaluation of the Cement Treated Base Failure of SH 36 in Houston, TX-96/2919-2, Sanet Bredenkamp and Tom Scullion.**

This report presents the field and laboratory tests undertaken to identify the cause of the rapid deterioration and failure of the Cement Treated Base on SH 36 in Houston, Texas.

**Teleconference for Implementing Proper Erosion and Sediment Control, FHWA/OH-95/026, Gayle F. Mitchell.**

This report summarizes the ratings, responses and comments given by participants in an Ohio Department of Transportation teleconference on erosion and sediment control.

**Retroreflective Sheeting Materials on Highway Signs, MN/RC-96/07, Donna Tranchida, Erik Arthur and Stirling P. Stackhouse.**

This report presents the results of a study comparing the visibility of different retroreflective sign sheeting materials.

**Characterization of Asphalt Cements Modified with Crumbed Rubber From Discarded Tires, FHWA/LA-95/291, William H. Daly and Ioan Negulescu.**

The potential legislative requirement for incorporation of scrap rubber into asphalt blends mandated a thorough evaluation of the influence of scrap rubber

additives on the physical properties and aging characteristics of rubber/asphalt blends. Results of this evaluation are outlined in this report.

**Travel Time Models for Forest Roads, 9677 1202-SDTDC, Jeffry E. Moll and Ronald Copstead.**

In this report, a method used by the USDA Forest Service for predicting the travel time of commodity haul vehicles on forest

roads, referred to as BNG, is compared with two computer based vehicle performance simulations, OTTO and TRUCK, and with observed travel times.

**Performance Evaluation of Multi-Cell Culverts, FHWA/OH-95/007, Simsek Sarikelle.**

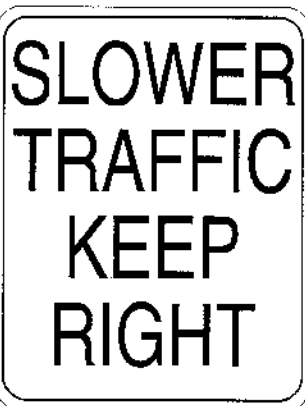
This study concentrated on the determination of the effect of stream alignment, culvert geometry and number of cells on culvert performance. The results of field and laboratory model studies are presented in this publication.

**Snow and Ice Control: A Best Practices Review, May 1995, Office of the Legislative Auditor, State of Minnesota.**

This report identifies some of the best snow and ice control techniques used in the State of Minnesota. It is based on surveys of the current practices of counties, cities and townships, as well as the latest research findings of scientists and road maintenance engineers. It catalogs the methods of snow and ice control, as well as the conditions under which they may be successful. This report is a source of both old and new ideas on how to control snow and ice.

**Characteristics of Remainders of Partial Takings Significantly Affecting Right of Way Costs, FHWA/TX-95/1390-2F, J.L. Buffington, M.K. Chui, J.L. Memmott and F. Saad.**

This study looks at ways to reduce right of way costs, specifically, through taking into consideration any benefits to a property owner after partial taking of property in subsequent awarding of damages. This study seeks to determine which characteristics of the property that remains after a partial taking significantly affect right of way costs.



**Highways in the River Environment Participant Notebook, FHWA-HI-90-016, E.V. Richardson, D.B. Simons and P.Y. Julien.**

This is the 1990 updated version of the 1975 document of the same name.

**Fatigue and Stiffness Properties of Roadbase Layer Using Indirect Tensile Test, Nr. 254, Safwat F. Said.**

Quality control and evaluation of bituminous pavement layers often have to be performed by highway engineers. This publication reports on the use of indirect tensile testing for routine pavement measurements.

**Heavy Construction Cost Data 1996 (metric), R.S. Means Co.**

This reference book gives information in chart form on costs of all areas of heavy construction.

**Traffic Signal Installation and Maintenance Manual, Institute of Transportation Engineers.**

This book outlines effective methods of traffic signal installation and maintenance, including installation methods that may help to reduce the amount of maintenance needed later.

**Analysis of Elastomeric Bridge Bearings, FHWA/TX-95-1304-5, O. Hamzeh, J.L. Tassoulas and E.B. Becker.**

The results of a study performed to examine the effects of several design parameters on the bearing are presented in this report.

**The 1996 Public Works Manual, April 15, 1996.**

This is a comprehensive general reference guide covering the areas of general operations, streets and highways, water supply and treatment, water pollution

control, solid waste management, grounds maintenance and outdoor recreation, and microcomputers and software.

**Use of Recycled Materials and Recycled Products in Highway Construction, UMTC-95-1, Don J. DeGroot, Wayne M. Shelburne and Michael S. Switzenbaum.**

This report presents results of a research project conducted by the University of Massachusetts Amherst on the use of recycled materials and products in highway construction. The objective of this project was to develop both short term and long term implementation plans for the use of these materials using existing applications, guidelines and specifications.

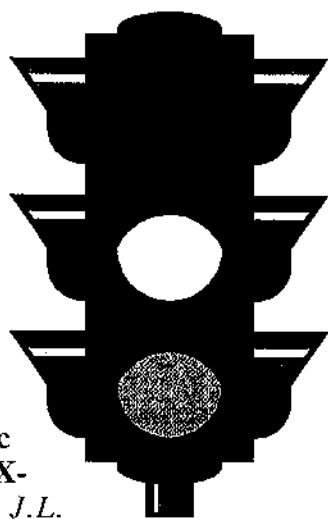


**Evaluation of Stress-Wave Methods for Implementation into a Rolling System to Detect Pavement Irregularities, FHWA/TX-95-1243-5F, Brent L. Rosenblad, Kenneth H. Stokoe and J.M. Roesset.**

Experimental testing was performed to study the feasibility of implementing two stress-wave techniques, the impact-echo and the impulse response methods, into a rolling system for "on the fly" detection of subsurface flaws in rigid concrete pavements. This report contains the results of this testing.

**TravTek Evaluation Safety Study, FHWA-RD-95-188, W.A. Perez, M. VanAerde, H. Rakha and M. Robinson.**

One of the major operational goals of the TravTek operational test was to assess the safety impact of the TravTek system as implemented in Orlando, Florida. The results of the TravTex operational test were also to be used to estimate the potential safety impact of a TravTek-like system under levels of high market penetration. This report covers different safety related aspects of the TravTek system.



*The publications listed are available for loan from the Alaska T<sup>2</sup> Program library.  
To borrow any of the materials listed, contact Susan Earp at (907) 451-5320*

# Free Stuff

*The Alaska T<sup>2</sup> Center has extra copies of some publications available free of charge. Publication titles are: Advanced Technology for Soil Slope Stability, Volume 1 Slope Stability Manual; Design Guidelines for the Control of Blowing and Drifting Snow; Distress Identification Manual for the Long-Term Pavement Performance Project; and Local Low Volume Roads and Streets. Copies available on a first come first served basis, so get yours now!*

## For More Information

For back issues of our newsletter and inserts, or to get on our mailing list, write: Alaska Transportation Technology Transfer Program, Department of Transportation and Public Facilities, 2301 Peger Road, M/S 2550, Fairbanks, Alaska 99709-5399. For more information, you can also call (907) 451-5320.

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## NATIONAL HIGHWAY INSTITUTE

The National Highway Institute (NHI) is the technical training arm of the Federal Highway Administration and the leading resource for comprehensive technical training programs in highway construction, highway engineering and highway-related environmental impact considerations.

A major service of the NHI is the development and presentation of advanced technical training that is not readily available from other sources. NHI training courses address topics relating to innovative technologies, recent advances emanating from research results, modern procedures and state-of-the-practice techniques. Since its establishment in 1970, through the Federal Highway Act, the NHI has trained more than 300,000 individuals in more than 8,000 presentations.

Passage of the Intermodal Surface Transportation Act (ISTEA) legislation in 1991 authorized NHI to expand its mission to more fully meet the training needs of the entire transportation community. Our expanded mission now includes the development and delivery of training programs for all public and private sector organizations involved in highway transportation - both Nationally and Internationally.

For more information about NHI training programs and/or to receive a free Course Catalog, please contact the NHI Course Coordinator at:

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Turner-Fairbank Highway Research Center  
6300 Georgetown Pike, HHI-20  
McLean, Virginia 22101  
Attn: Ms. Hana Maier, Course Coordinator

FAX: (703) 235-0593 TEL: (703) 235-0500  
(702) 329-5098 (702) 329-4955

INTERNET: HMAIER@intergate.dot.gov

## TENTATIVE COURSE SCHEDULE

Tuesday 9/10	Wednesday 9/11	Thursday 9/12	Friday 9/13	Sat/Sun 9/14-15	Monday 9/16	Tuesday 9/17	Wednesday 9/18	Thursday 9/19
New Pavement Design	Mix Design	QA/QC in Construction	Distress ID Manual	Visiting National Park or Other Attractions	Distress ID Manual	Rehabilitation Asphalt	Rehabilitation PCC	Workshop: Select Rehab Alternatives Life Cycle Costs
Industry Sponsored Lunches					Industry Sponsored Lunches			
Overlay Design	Superpave™ Regional Center Demo/Labs	Test Track Tour	Distress ID Manual	NDT Structural Evaluation	Rehabilitation Asphalt	Rehabilitation Selection of Alternatives Life Cycle Costs	Discussion Summary Evaluation	

**P**avement Distress Identification & Techniques for Rehabilitation and Design, sponsored by the National Highway Institute, Federal Highway Administration (FHWA), U.S. Department of Transportation, is designed to provide practical training for the new design, quality control, distress identification and pavement rehabilitation of highway facilities. The course is offered as a tool to learn new Strategic Highway Research Program (SHRP) pavement design methods, statistical quality control, the SHRP pavement distress identification procedure and the most cost-effective rehabilitation alternatives. The training will be of interest to first-line construction supervisors; construction and design engineers; technicians and highway engineers dealing in pavement rehabilitation and distress identification indices.

### TRAINING FORMAT

The course will be conducted over a 10-day period between September 9-19, 1996 and will take place at the University of Nevada, Reno. A variety of instructional techniques will be employed, including lecture, discussions, case studies and workshops. The course will include seven days of classroom training. Field work will complement concepts learned in the classroom. Each participant will receive the texts "Techniques for Pavement Rehabilitation: A Training Course" and "Distress Identification Manual for the Long-Term Pavement Performance Project." These publications will serve as valuable future references.

On-site field visits will include the University of Nevada SUPERPAVE™ Lab Center and the state-of-the-art experimental road facility, **WestTrack**, a FHWA project to conduct accelerated field testing of performance-related specifications of asphalt mixes. Participants will have the opportunity to conduct hands-on experiments during field visits. In addition, representatives from the U.S. pavement rehabilitation industry will be available to meet with participants to discuss their products throughout the course.

### COURSE OBJECTIVES

Upon completion of the course, participants should be able to:

- ♦ Describe typical performance of conventional pavements in terms of key types of deterioration.
- ♦ Recognize common pavement distress types, determine their causes and be familiar with procedures for project field surveys, including coring and non-destructive deflection testing.
- ♦ Recognize the principles and the importance of pavement recycling.
- ♦ Understand the elements of the SHRP SUPERPAVE™ mix design procedures.
- ♦ Be familiar with Mechanistic and AASHTO pavement design procedures.
- ♦ Design various types of overlays.
- ♦ Recognize the importance of considering geometric, safety improvements and other important factors in 4R design.
- ♦ Develop, evaluate and select the most cost-effective 4R alternative for a given project.

### INSTRUCTORS

The course will be taught by the staff of Nichols Consulting Engineers, Chtd. (NCE), specializing in evaluation, design and research for roadway and airfield pavements, and will include assistance from internationally-recognized experts in pavement engineering. The NCE staff and key guest lecturers include the following:

**Stephen Seeds:** Principal Instructor on Techniques for Pavement Rehabilitation and Co-Principal Investigator on "WestTrack" project.

**Douglas Erith:** Principal Instructor on Pavement Distress Identification and Principal Investigator on SHRP Long-Term Pavement Performance, Western Region.

**Margot Yapp:** Instructor on Pavement Distress Identification and Engineer-In-Charge, NCE Santa Cruz, California office.

**Newton Jackson:** Instructor on Pavement Rehabilitation Training, Former Pavement Design Engineer and Pavement Management Engineer for the State of Washington.

**Jon Epps:** Instructor on Mix Design and QC/QA, Professor of Civil Engineering, University of Nevada, Reno and Principal Investigator of "WestTrack."

**Carl Monismith:** Instructor on Thickness and Overlay Design, Professor of Civil Engineering at the University of California at Berkeley and Principal Investigator on SHRP A-003A Project, "Performance-Related Testing and Measuring of Asphalt-Aggregate Interaction and Mixtures."

**Gary Hicks:** Instructor on Techniques for Pavement Rehabilitation, Professor of Civil Engineering at Oregon State University and Principal Investigator for "Crumb Rubber Modifiers in Asphalt Pavements" Study.

**Rita Leahy:** Instructor on Superpave, Assistant Professor of Civil Engineering, Oregon State University and Principal Investigator on Implementation of SHRP Mixture Design Procedures for Oregon DOT.

### REGISTRATION

Each individual is required to pay a course fee of US\$1,200. This fee covers all training materials, a certificate of completion and transportation to and from field visits. Lodging and meal expenses are the responsibility of each participant - it is estimated that for 10 days these expenses will total \$700. The total cost of the two-week training program is approximately \$1,900 plus the cost of the participant's round-trip airfare.

Individuals interested in attending the course are requested to complete the attached form and return it to the National Highway Institute in order to receive confirmation of registration, payment information, course agenda and lodging information. To ensure a space in the course, you must register by August 2, 1996.

### EXHIBITS

U.S. Industry representatives may register (\$1,200) for the training and are also invited to display their products and/or product information during the course. Interested parties are asked to contact the National Highway Institute Course Coordinator for more information: Ms. Hana Maier at TEL (703) 235-0500 or FAX (703) 235-0593.

Yes, please register me for "Pavement Distress Identification & Techniques for Rehabilitation and Design: A Training Course for Industry, State, Local and International Highway Engineers" which will take place in Reno, Nevada during September 9-19, 1996.

NAME

ORGANIZATION

ADDRESS

COUNTRY

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FAX

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Please send/fax this form to the National Highway Institute Course Coordinator at:

**NATIONAL HIGHWAY INSTITUTE**  
Turner-Fairbank Highway Research Center  
6300 Georgetown Pike, HHI-20  
McLean, Virginia 22101  
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